

Remarks

Claims 1-20 are pending in the application. Claims 1-14 were rejected and claims 15-20 were withdrawn. Reconsideration of the claims is respectfully requested. No new matter has been added.

Rejection Under 35 U.S.C. § 103

Claims 1-4, 7 and 8 were rejected under § 103(a) as being unpatentable over U.S. Patent No. 4,741,078 issued to Kimura (hereinafter “Kimura ‘078”) in view of U.S. Patent No. 3,828,479 issued to Highberg et al. (hereinafter “Highberg ‘479”). A *prima facie* case has not been established for the rejection of claim 1. Claim 1 recites a spindle positioning apparatus for a robotic manipulator comprising “a mounting plate assembly attached to the robotic manipulator, a first spindle disposed on the mounting plate assembly in a fixed position, a second spindle disposed on the mounting plate assembly and movable with respect to the first spindle, and an actuator mechanism adapted to position the second spindle with respect to the first spindle.” Neither Kimura ‘078 nor Highberg ‘479, either alone or in any combination, recites the combination recited in claim 1.

In the Office Action, the Examiner looked to Highberg ‘479 as the sole basis of support for all elements of claim 1 except a robotic manipulator. Highberg ‘479 does not cure the deficiencies of Kimura ‘078. For example, Highberg ‘479 does not disclose “a first spindle disposed on the mounting plate assembly in a fixed position” and “a second spindle disposed on the mounting plate assembly and movable with respect to the first spindle.” Instead, Highberg ‘479 discloses an “invention for drilling three holes in a predetermined pattern and spacing using a spindle cluster assembly D” (see column 5, lines 10-12). The spindle “cluster assembly D is adapted to hold in position three spindles 61, 62 and 63” (see column 5, lines 13-14). Highberg ‘479 emphasizes that “with this arrangement the spindles are all accurately secured in their predetermined positions relative to the slide and to one another” (see column 5, lines 43-45). In other words, Highberg ‘479 discloses that no spindle moves relative to another spindle.

In addition, Highberg '479 does not disclose "an actuator mechanism adapted to position the second spindle with respect to the first spindle." In the Office Action, the Examiner pointed to column 5, lines 19-26 of Highberg '479 for support (see Office Action, page 3), which reads as follows:

The assembly D comprises a main adapter 64 bolted to the slide 21 with machine screws 65. The spindles 61 and 62 are clamped to the main adapter 64 with a secondary adapter 66 that functions for this purpose as a clamp. The main adapter 64 and the secondary adapter 66 have cylindrical 180° recesses matching the cylindrical housings as in previous forms of the invention.

Clearly, the quoted passage merely relates to clamping of spindles 61 and 62 and does not disclose or remotely suggest any actuator mechanism, let alone an actuator mechanism as claimed.

For these reasons, a *prima facie* case has not been established for the rejection of claim 1. Since claims 2-4, 7 and 8 depend on claim 1, a *prima facie* case has not been established for the rejection of these claims for the same reasons. Thus, Applicants respectfully request that the rejection of these claims be withdrawn.

Even if a proper rejection was established for the rejection of claim 1, a *prima facie* case has not been established for the rejection of claim 2. Claim 2 recites that "the mounting plate assembly includes a fixed plate adapted to receive the first spindle and disposed proximate the robotic manipulator and a movable plate adapted to receive the second spindle and movably attached to the fixed plate." In the Office Action, the Examiner presented no arguments to support this rejection. Thus, a *prima facie* case has not been established and Applicants respectfully request that this rejection be withdrawn.

Even if a proper rejection was established for the rejection of claim 1, a *prima facie* case has not been established for the rejection of claim 3. Claim 3 recites that “the first spindle extends through the fixed plate and the second spindle extends through the movable plate.” Highberg ‘479 does not disclose or remotely suggest the invention as claimed. Instead, Highberg ‘479 merely discloses that “spindles 61 and 62 are clamped to the main adapter 64 with a secondary adapter 66 that functions for this purpose as a clamp” (see column 5, lines 20-23). In other words, the main or secondary adapters 64,66 (called a “moveable plate” by the Examiner) are clamps that do not move and do not satisfy the moveable plate limitations of claim 2. Thus, a *prima facie* case has not been established and Applicants respectfully request that this rejection be withdrawn.

Even if a proper rejection was established for the rejection of claim 1, a *prima facie* case has not been established for the rejection of claim 4. Claim 4 recites that “the actuator mechanism is disposed proximate the mounting plate assembly.” Highberg ‘479 does not disclose or remotely suggest the invention as claimed. As previously discussed, there is no disclosure or suggestion of any actuator mechanism in Highberg ‘479, let alone an actuator mechanism as recited in claim 4. Thus, a *prima facie* case has not been established and Applicants respectfully request that this rejection be withdrawn.

Claims 5 and 6 were rejected under § 103(a) as being unpatentable over Kimura ‘078 in view of Highberg ‘479, and further in view of U.S. Patent No. 3,822,958 issued to Lewis (hereinafter “Lewis ‘958”). Claims 5 and 6 depend on claim 1. Consequently, these claims are believed to be allowable for the reasons previously discussed.

Claims 9 and 14 were rejected under § 103(a) as being unpatentable over Kimura ‘078 in view of Highberg ‘479. A *prima facie* case has not been established for the rejection of claim 9. Claim 9 recites a multi-spindle positioning assembly comprising “a multi-axis robot having a manipulator arm” and “a spindle positioning apparatus including a first mounting plate attached to the manipulator arm and having a first opening, a second mounting plate movably attached to the first mounting plate and having a second opening, a first spindle

extending through the first opening and attached to the first mounting plate, a second spindle extending through the second opening and attached to the second mounting plate, and an actuator mechanism adapted to position the second spindle with respect to the first spindle.” Neither Kimura ‘078 nor Highberg ‘479, either alone or in any combination, recites the combination recited in claim 9.

In the Office Action, the Examiner looked to Highberg ‘479 as the sole basis of support for all elements of claim 9 except a multi-axis robot having a manipulator arm. Highberg ‘479 does not cure the deficiencies of Kimura ‘078. For example, Highberg ‘479 does not disclose “a second mounting plate movably attached to the first mounting plate and having a second opening.” Instead, Highberg ‘479 discloses an “invention for drilling three holes in a predetermined pattern and spacing using a spindle cluster assembly D” (see column 5, lines 10-12). The spindle “cluster assembly D is adapted to hold in position three spindles 61, 62 and 63” (see column 5, lines 13-14). Highberg ‘479 emphasizes that “with this arrangement the spindles are all accurately secured in their predetermined positions relative to the slide and to one another” (see column 5, lines 43-45). In other words, Highberg ‘479 discloses that no spindle moves relative to another spindle. Moreover, Highberg ‘479 does not disclose or remotely suggest first and second mounting plates as claimed. In the Office Action, the Examiner stated that spindle clamp 68 and machine screw 69 was a first mounting plate and that spindle clamp 68 was also a second mounting clamp (see Office Action, page 5). Spindle clamp 68 cannot logically be both a first mounting plate and second mounting plate. Moreover, such an interpretation fails to satisfy the claim limitation that the “second mounting plate” is “moveably attached to the first mounting plate.” Furthermore, neither spindle clamp 68 nor machine screw 69 has first and second openings for receiving the first and second spindles as claimed.

In addition, Highberg ‘479 does not disclose “an actuator mechanism adapted to position the second spindle with respect to the first spindle.” In the Office Action, the Examiner pointed to column 5, lines 19-26 of Highberg ‘479 for support (see Office Action, page 3), which reads as follows:

The assembly D comprises a main adapter 64 bolted to the slide 21 with machine screws 65. The spindles 61 and 62 are clamped to the main adapter 64 with a secondary adapter 66 that functions for this purpose as a clamp. The main adapter 64 and the secondary adapter 66 have cylindrical 180° recesses matching the cylindrical housings as in previous forms of the invention.

Clearly, the quoted passage merely relates to clamping of spindles 61 and 62 and does not disclose or remotely suggest any actuator mechanism, let alone an actuator mechanism as claimed.

For these reasons, a *prima facie* case has not been established for the rejection of claim 9. Since claim 14 depends on claim 9, a *prima facie* case has not been established for the rejection of claim 14 for the same reasons. Thus, Applicants respectfully request that the rejection of these claims be withdrawn.

Even if a proper rejection was established for the rejection of claim 9, a *prima facie* case has not been established for the rejection of claim 14. Claim 14 recites that “the first and second spindles include first and second tools, respectively, each adapted to engage a threaded part.” Highberg ‘479 does not disclose or remotely suggest the invention as claimed. Indeed, the Examiner has not pointed with particularity to any part of Highberg ‘479 to support this rejection, which is sufficient to negate the establishment of a *prima facie* case. Moreover, Highberg ‘479 simply does not disclose or suggest first and second tools that are each adapted to engage a threaded part. For these reasons, Applicants respectfully request that this rejection be withdrawn.

Claim 10 was rejected under § 103(a) as being unpatentable over Kimura '078 in view of Highberg '479, and further in view of U.S. Patent No. 3,290,968 issued to Gesko (hereinafter "Gesko '968"). Claim 10 depends on claim 9. Consequently, this claim is believed to be allowable for the reasons previously discussed.

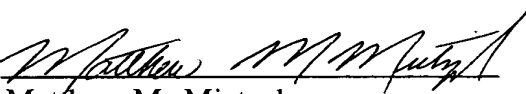
Even if a proper rejection was established for the rejection of claim 9, a *prima facie* case has not been established for the rejection of claim 10. Claim 10 recites "a track disposed proximate the first mounting plate and adapted to movably receive the second mounting plate." Gesko '968 does not disclose or remotely suggest the invention as claimed. In the Office Action, the Examiner stated that element 46 was a track (see Office Action, page 6). Element 46 is merely a "longitudinal extending slot" that "receives drill spindles 24" (see column 4, lines 46-50). In other words, there is no disclosure or suggestion of slot 46 receiving anything but a drill spindle, let alone a second mounting plate as claimed. Applicants note that the Examiner has generically referenced Figure 5, but has not pointed with particularity to any element of Gesko '968 as being a second mounting plate. Applicants are therefore left to guess at the basis for this rejection as there is simply nothing in slot 46 in Figure 5. For these reasons, a *prima facie* case has not been established and Applicants respectfully request that this rejection be withdrawn.

Claims 11-13 were rejected under § 103(a) as being unpatentable over Kimura '078 in view of Highberg '479, and further in view of Lewis '958. Claims 11-13 depend on claim 9. Consequently, these claims are believed to be allowable for the reasons previously discussed.

Conclusion

Applicants have made a genuine effort to respond to the Examiner's objections and rejections in advancing the prosecution of this case. Applicants believe all formal and substantive requirements for patentability have been met and that this case is in condition for allowance, which action is respectfully requested.

Respectfully submitted,
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